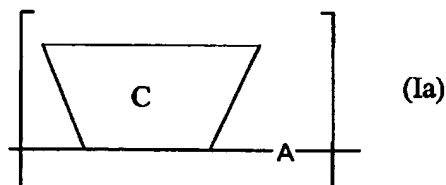


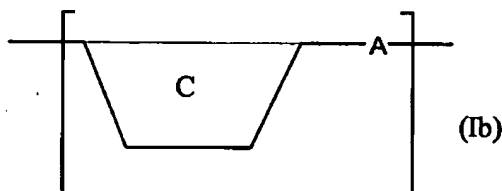
Serial No.: 09/339,818

OFFICIAL
Attorney Docket No.: CTCH-P02-012In the claims:

1. (Previously Presented) A water-soluble, linear cyclodextrin copolymer comprising repeating units of formula Ia, Ib or both:



and



wherein C is a substituted or unsubstituted cyclodextrin monomer and A is a comonomer bound to cyclodextrin C.

2. (Original) A cyclodextrin copolymer of claim 1, wherein said cyclodextrin monomer is an α -, β -, or γ -cyclodextrin, or combination thereof.
3. (Previously Presented) A cyclodextrin copolymer of claim 1, wherein said cyclodextrin monomer is selected from: 6^A,6^B-deoxy- α -cyclodextrin (n=0, m=4), 6^A,6^C-deoxy- α -cyclodextrin (n=1, m=3), 6^A,6^D-deoxy- α -cyclodextrin (n=2, m=2), 6^A,6^B-deoxy- β -cyclodextrin (n=0, m=5), 6^A,6^C-deoxy- β -cyclodextrin (n=1, m=4), 6^A,6^D-deoxy- β -cyclodextrin (n=2, m=3), 6^A,6^B-deoxy- γ -cyclodextrin (n=0, m=6), 6^A,6^C-deoxy- γ -cyclodextrin (n=1, m=5), 6^A,6^D-deoxy- γ -cyclodextrin (n=2, m=4), and 6^A,6^E-deoxy- γ -cyclodextrin (n=3, m=3).
- 4-5. (Cancelled)
6. (Previously Presented) A cyclodextrin copolymer of claim 1, wherein A is a protonated or non-protonated comonomer selected from:

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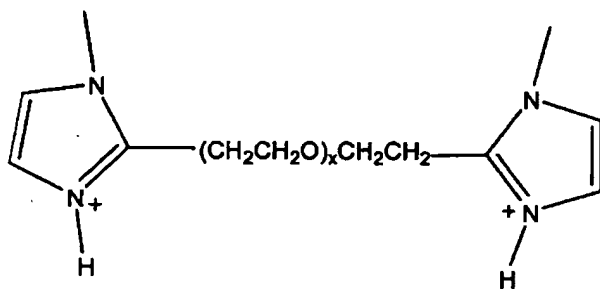
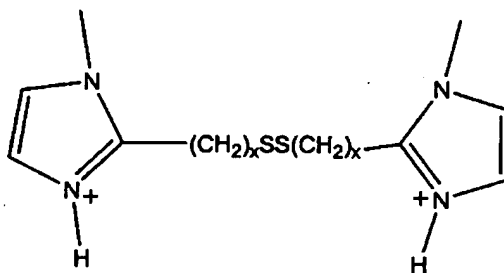
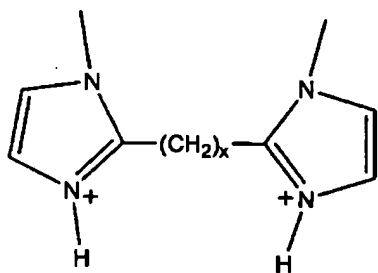
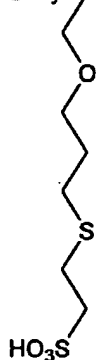
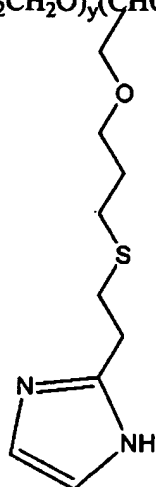
$-\text{HNC}(\text{O})(\text{CH}_2)_x\text{C}(\text{O})\text{NH}-$, $-\text{HNC}(\text{O})(\text{CH}_2)_x\text{SS}(\text{CH}_2)_x\text{C}(\text{O})\text{NH}-$,
 $-\text{}^+\text{H}_2\text{N}(\text{CH}_2)_x\text{SS}(\text{CH}_2)_x\text{NH}_2^+-$, $-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$,
 $-\text{HNNHC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NHNH}-$,
 $-\text{}^+\text{H}_2\text{NCH}_2(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2^+-$,
 $-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{SS}(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$,
 $-\text{HNC}(\text{NH}_2^+)(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{NH}_2^+)\text{NH}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)(\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)(\text{CH}_2)_x\text{SS}(\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)\text{CH}_2\text{CH}_2(\text{OCH}_2\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_y(\text{CHCH}_2\text{O})_z\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$



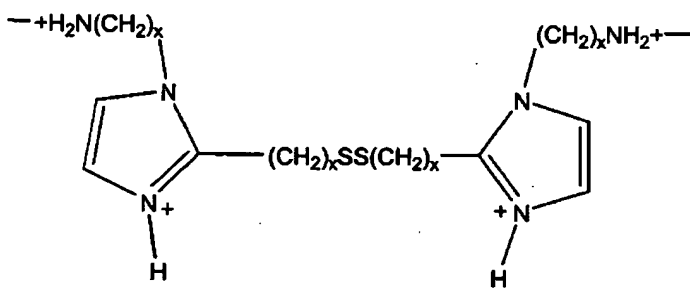
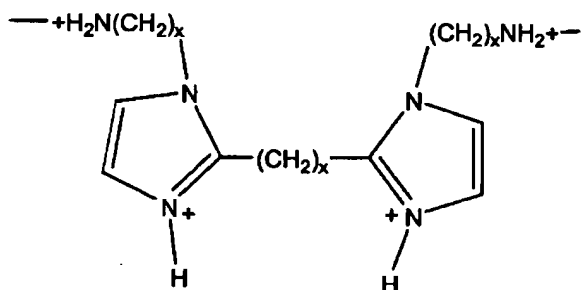
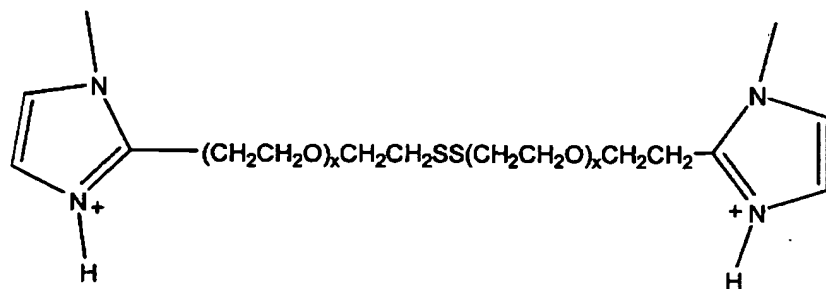
$-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_y(\text{CHCH}_2\text{O})_z\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$



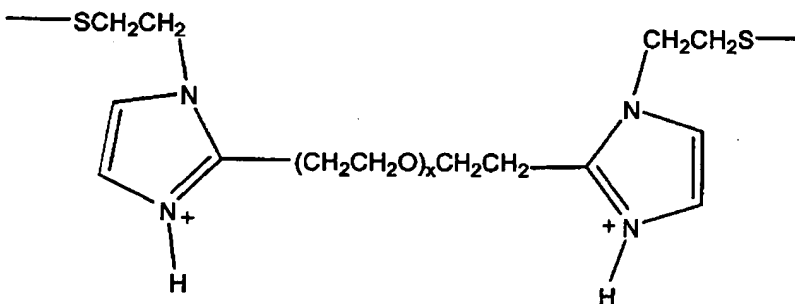
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and

wherein $x = 1-50$ and $y+z=x$.

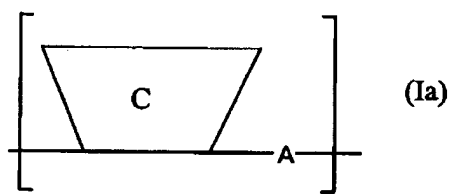
7. (Original) A cyclodextrin copolymer of claim 1, wherein A is biodegradable or acid-labile.

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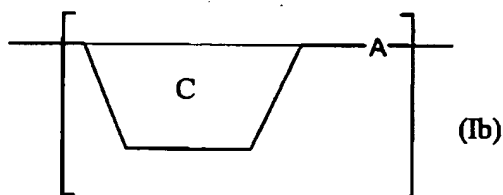
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8. (Original) A cyclodextrin copolymer of claim 1, wherein the cyclodextrin copolymer is crosslinked to a polymer.
9. (Previously Presented) A cyclodextrin copolymer of claim 8, wherein the polymer further comprises at least one ligand bound to the linear cyclodextrin copolymer, whereby said ligand allows the linear cyclodextrin copolymer to target or bind to a cell.
10. (Previously Presented) A cyclodextrin copolymer of claim 1, wherein the polymer further comprises at least one ligand bound to the linear cyclodextrin copolymer, whereby said ligand allows the linear cyclodextrin copolymer to target or bind to a cell.
- 11-17. (Cancelled)
18. (Previously Presented) A therapeutic composition comprising a cyclodextrin copolymer of claim 1, 8, 9, or 10 and a therapeutic agent.
- 19-23. (Cancelled)
24. (Previously Presented) A method of preparing a linear cyclodextrin copolymer, comprising:
copolymerizing a cyclodextrin monomer precursor, where said cyclodextrin monomer precursor is disubstituted with the same or different leaving group, with a comonomer A precursor capable of displacing said leaving groups to form a linear cyclodextrin copolymer having repeating units of formula Ia, Ib, or a combination thereof:



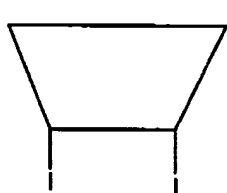
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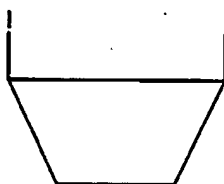
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wherein C is a substituted or unsubstituted cyclodextrin monomer and A is a comonomer bound to cyclodextrin C.

25. (Previously Presented) A method of preparing a water-soluble, linear cyclodextrin copolymer of claim 24, wherein said disubstituted cyclodextrin monomer precursor is a diiodinated cyclodextrin monomer precursor of formula IVa, IVb, IVc or a mixture thereof:

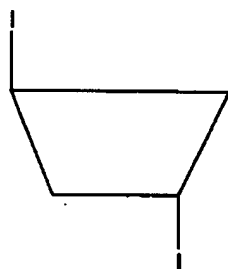


IVa ,



IVb ,

and



IVc

26. (Original) A method of claim 24, wherein said cyclodextrin monomer C is an α -, β -, or γ -cyclodextrin, or combination thereof.

27-29. (Cancelled)

30. (Previously Presented) A method of claim 24, wherein A is a protonated or non-protonated comonomer selected from:

-HNC(O)(CH₂)_xC(O)NH-, -HNC(O)(CH₂)_xSS(CH₂)_xC(O)NH-,
⁺H₂N(CH₂)_xSS(CH₂)_xNH₂⁺-, -HNC(O)(CH₂CH₂O)_xCH₂CH₂C(O)NH-,

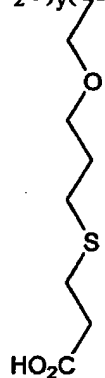
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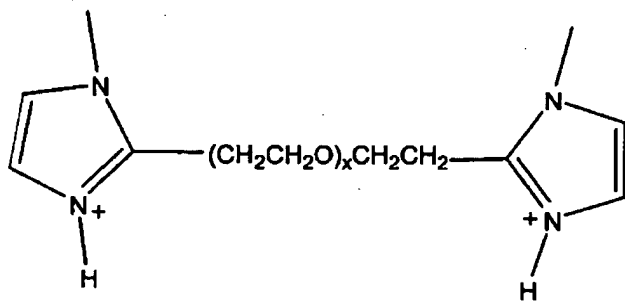
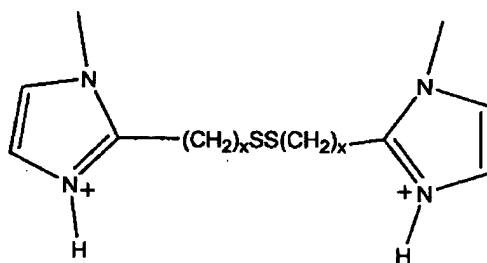
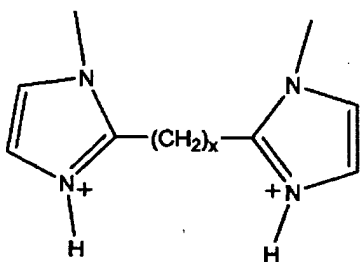
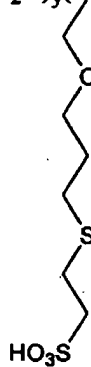
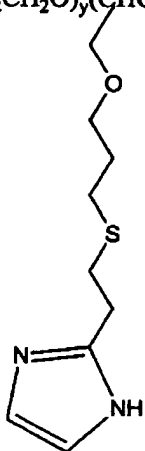
$-\text{HNNHC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NHNH}-$,
 $-\text{H}_2\text{NCH}_2(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2^+$,
 $-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{SS}(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$,
 $-\text{HNC}(\text{NH}_2^+)(\text{CH}_2\text{CH}_2\text{O})_x\text{CH}_2\text{CH}_2\text{C}(\text{NH}_2^+)\text{NH}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)(\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)(\text{CH}_2)_x\text{SS}(\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{SCH}_2\text{CH}_2\text{NHC}(\text{NH}_2^+)\text{CH}_2\text{CH}_2(\text{OCH}_2\text{CH}_2)_x\text{C}(\text{NH}_2^+)\text{NHCH}_2\text{CH}_2\text{S}-$,
 $-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_y(\text{CHCH}_2\text{O})_z\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$



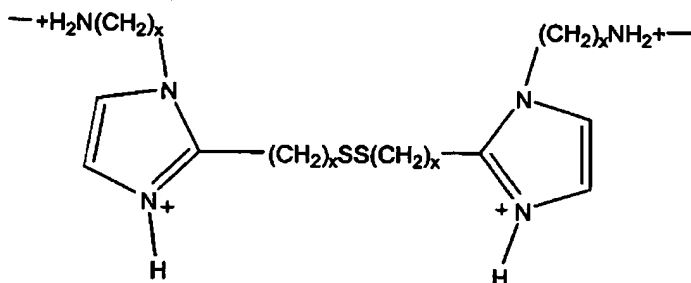
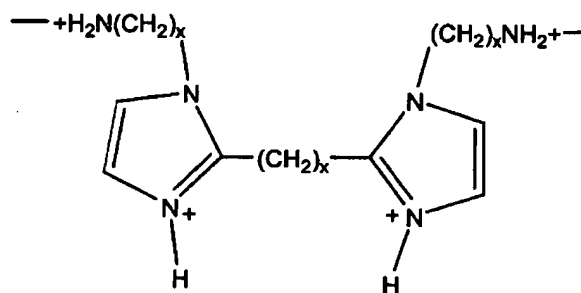
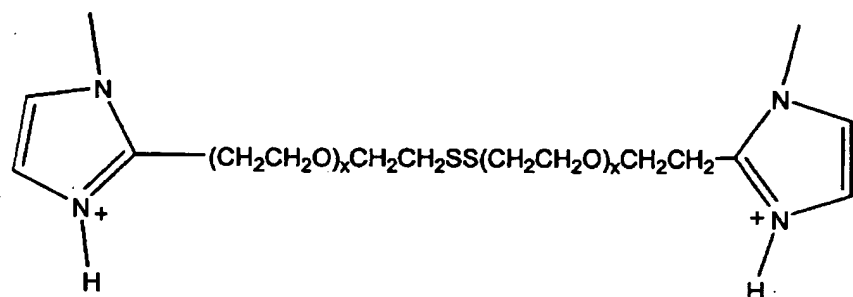
$-\text{HNC}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_y(\text{CHCH}_2\text{O})_z\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{NH}-$



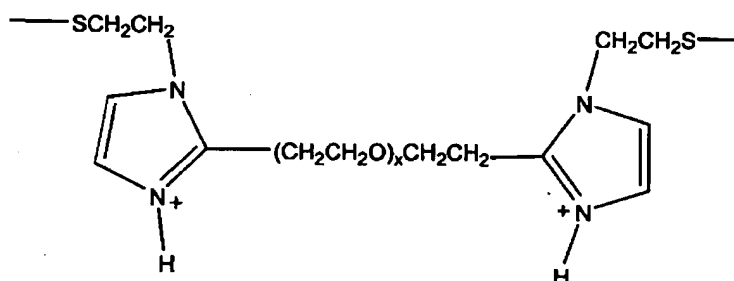
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Attorney Docket No.: CTCH-P02-012

and

wherein $x = 1-50$ and $y+z=x$.

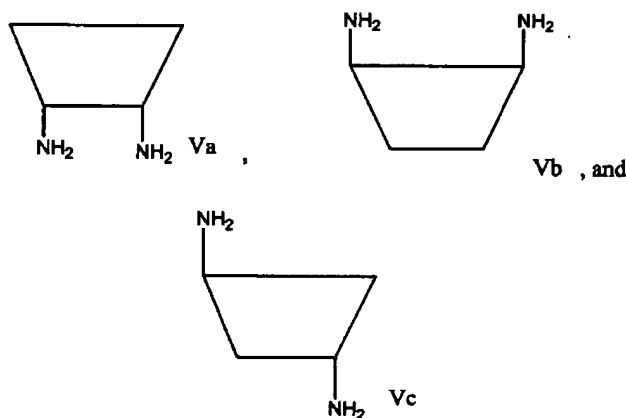
31. (Previously Presented) A method of claim 24, further comprising reacting said linear cyclodextrin copolymer with a ligand to form a linear cyclodextrin copolymer having at least one ligand bound to the copolymer, whereby said ligand allows the linear cyclodextrin copolymer to target or bind to a cell.

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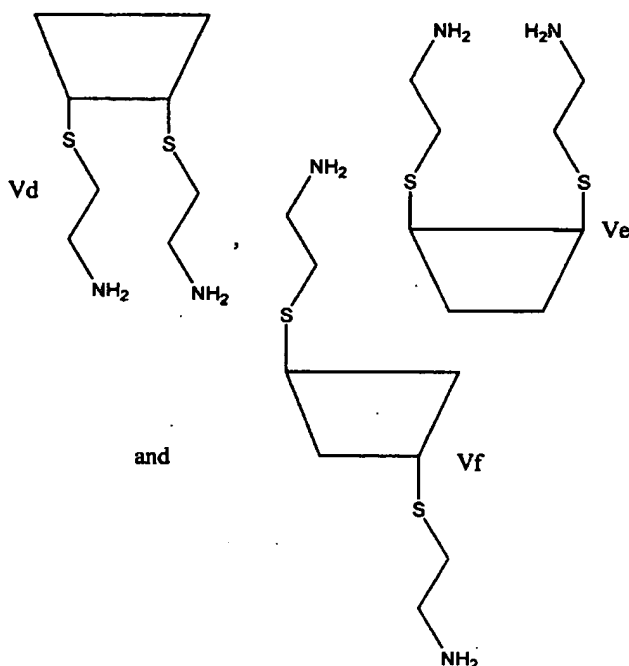
32. (Previously Presented) A method of claim 25, further comprising
aminating said diiodinated cyclodextrin monomer precursor to form a diaminated
cyclodextrin monomer precursor; and
copolymerizing said diaminated cyclodextrin monomer precursor to form said
cyclodextrin copolymer having repeating units of formula Ia, Ib, or a combination
thereof.

33. (Previously Presented) A method of claim 32, wherein said diaminated
cyclodextrin monomer precursor is has a structure of formula Va, Vb, Vc or a mixture
thereof:



34. (Previously Presented) A method of claim 32, wherein said diaminated
cyclodextrin monomer precursor has a structure is of formula Vd, Ve, Vf or a mixture
thereof:

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35-43. (Cancelled)

44. (Previously Presented) A method of delivering a therapeutic comprising administering a therapeutically effective amount of a therapeutic composition of claim 18.

45. (Cancelled)

46. (Previously Presented) A method of delivering a therapeutic agent comprising: combining a cyclodextrin copolymer of any of claims 1, 8, 9, or 10 with a therapeutic agent to form a mixture; and allowing said mixture to self-assemble to form an associated composition; and administering a therapeutically effective amount of said associated composition to a subject in need of said therapeutic agent.

47-57. (Cancelled)

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58. (Previously Presented) A water-soluble, linear cyclodextrin polymer produced by a method comprising:

- a) providing at least one cyclodextrin derivative modified to bear one reactive site at each of exactly two positions; and
- b) reacting the cyclodextrin derivative with a linker having exactly two reactive moieties capable of forming a covalent bond with the reactive sites under polymerization conditions that promote reaction of the reactive sites with the reactive moieties to form covalent bonds between the linker and the cyclodextrin derivative,

whereby a linear polymer comprising alternating units of cyclodextrin derivatives and linkers is produced.

59. (Previously Presented) A water-soluble, linear cyclodextrin polymer having a linear polymer backbone, which polymer comprises a plurality of substituted or unsubstituted cyclodextrin moieties and linker moieties in the linear polymer backbone, wherein each of the cyclodextrin moieties is attached to up to two of said linker moieties, each linker moiety covalently linking two cyclodextrin moieties.

60. (Previously Presented) A water-soluble, linear cyclodextrin polymer comprising a plurality of cyclodextrin moieties covalently linked together by a plurality of linker moieties, wherein each cyclodextrin moiety is attached to up to two linker moieties to form a linear cyclodextrin polymer.

61. (Previously Presented) A purified water-soluble, linear cyclodextrin polymer produced by a method comprising:

- a) providing at least one cyclodextrin derivative modified to bear one reactive site at each of exactly two positions;
- b) reacting the cyclodextrin derivative with a linker having exactly two reactive moieties capable of forming a covalent bond with the reactive sites under polymerization conditions that promote reaction of the reactive sites with the reactive moieties to form covalent bonds between the linker and the cyclodextrin

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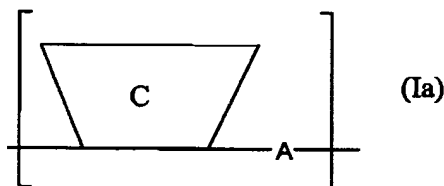
derivative, whereby a water-soluble, linear polymer comprising alternating units of cyclodextrin derivatives and linkers is produced; and

c) purifying the water-soluble, linear polymer.

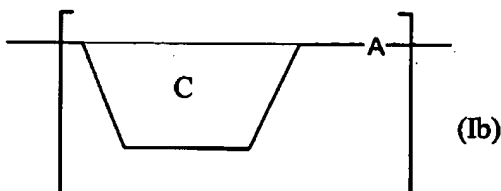
62. (Previously Presented) A purified water-soluble, linear cyclodextrin polymer having a linear polymer backbone, which polymer comprises a plurality of substituted or unsubstituted cyclodextrin moieties and linker moieties in the linear polymer backbone, wherein each of the cyclodextrin moieties is attached to up to two of said linker moieties, each linker moiety covalently linking two cyclodextrin moieties.

63. (Previously Presented) A purified water-soluble, linear cyclodextrin polymer comprising a plurality of cyclodextrin moieties covalently linked together by a plurality of linker moieties, wherein each cyclodextrin moiety is attached to up to two linker moieties to form a linear cyclodextrin polymer.

64. (Previously Presented) A purified water-soluble, linear cyclodextrin copolymer comprising repeating units of formula Ia, Ib, or both:



and



wherein C is a substituted or unsubstituted cyclodextrin monomer and A is a linker that covalently links two cyclodextrin moieties together in the polymer backbone, wherein each C is attached to at most two occurrences of A.